CoCoRaHS OBSERVER

Summer 2009

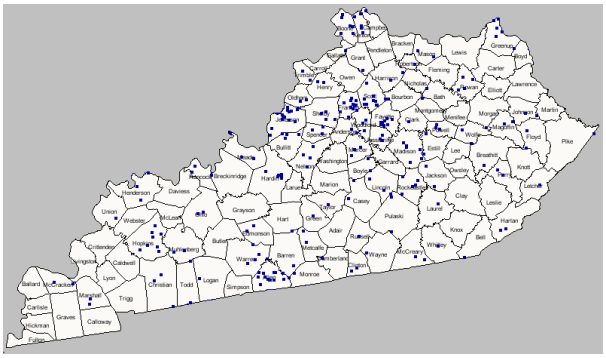
*Tell the National Weather Service How Much Rain **You** Got!*

CoCoRaHS (Community Collaborative Rain, Hail, and Snow Network) is a unique, non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail and snow). By using low-cost measurement tools and utilizing an interactive website, the goal is to provide the highest quality data for natural resource, education, and research applications.

The network has grown by leaps and bounds in recent years, but we still need many more observers — especially in Kentucky. While Indiana and Tennessee have over 1,000 observers apiece, Kentucky had only 243 as of May 1.

It's easy to join CoCoRaHS — simply sign up at the website (www.cocorahs.org). All you need to participate is a rain gauge (the website tells you how to get one) and a connection to the Internet either through your own computer or a friend's.

Check out the CoCoRaHS website or contact your local National Weather Service office for more information on this useful and fun program today! We look forward to your reports!



Locations of Kentucky's CoCoRaHS observers as of May 2009. Can you help fill in some of the gaps?

CoCoRaHS administrative headquarters are located at Colorado State University in Fort Collins, Colorado. The NWS is a major supporter of CoCoRaHS, along with the National Science Foundation, the Bureau of Land Management, and many other organizations.

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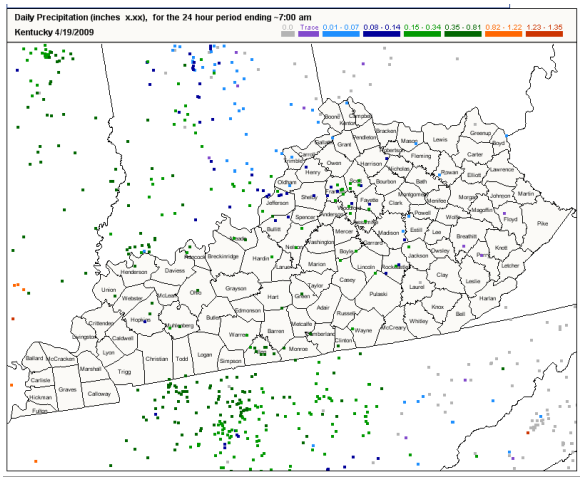
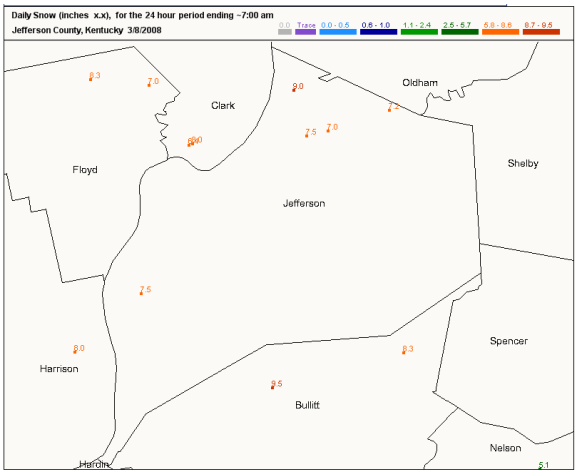
CoCoRaHS Website — A Valuable Resource

All CoCoRaHS observations are available at the website, www.cocorahs.org. There are many different ways in which to display the data, including on maps and in list form. Below are just a few examples:



Precipitation



Snowfall

Date5	Time	Station Number	Station Name	Total Precip .in	New Snow .in	Total Snow .in	State	County	View
5/4/2009	5:56 AM	KY-AL-1	Scottsville 8.1 WNW	0.73	NA	NA	KY	Allen	
5/4/2009	6:00 AM	KY-AL-16	Scottsville 0.9 S	0.98	NA	NA	KY	Allen	
5/4/2009	6:30 AM	KY-AL-4	Scottsville 9.2 ESE	1.08	0.0	0.0	KY	Allen	
5/4/2009	6:50 AM	KY-AL-12	Scottsville 5.8 NW	0.92	NA	NA	KY	Allen	
5/4/2009	7:00 AM	KY-AL-3	Scottsville 4.9 NE	0.83	NA	NA	KY	Allen	
5/4/2009	7:00 AM	KY-AL-5	Scottsville 5.5 NE	0.75	NA	NA	KY	Allen	
5/4/2009	7:00 AM	KY-AL-6	Scottsville 2.4 SE	0.85	NA	NA	KY	Allen	
5/4/2009	7:00 AM	KY-AL-11	Scottsville 4.9 NE	0.76	NA	NA	KY	Allen	
5/4/2009	7:00 AM	KY-AL-13	Scottsville 8.7 NW	0.63	NA	NA	KY	Allen	
5/4/2009	7:00 AM	KY-AL-14	Scottsville 3.5 WNW	1.00	NA	NA	KY	Allen	

Precipitation Reports

Date5	Station Number	Station Name	Comments	
4/16/2009	KY-FY-9	Lexington 1.7 SSE	Trace of precip observed in the gauge this morning. Mist with light drizzle at this location.	View
4/15/2009	KY-FY-9	Lexington 1.7 SSE	Precip of 0.03 in the gauge this am.	View
4/14/2009	KY-FY-9	Lexington 1.7 SSE	Precip of 0.33 observed in the gauge at 6 am. Very light rain falling currently.	View
4/13/2009	KY-FY-2	Lexington 5.2 SSW	Rain just starting to fall at observation	View
4/11/2009	KY-FY-9	Lexington 1.7 SSE	Reporting precip of 1.36 observed in the gauge, from yesterday's storm event.	View
4/11/2009	KY-FY-2	Lexington 5.2 SSW	Severe Thunderstorms in area, Tornadic storm 13 miles east at 330pm. Did note a few hail pieces in heavy rain	View

Plain Text Comments

Also, there is more to the website than just data! Training shows, observer support, Co-CoRaHS administrator e-mail addresses, and rain gauges are available, too. We will explore more facets of the website in upcoming issues of the *CoCoRaHS Observer*.

Your Reports Are Important

The National Weather Service (NWS) uses automated equipment to record and report weather conditions, but those automated weather stations are few and far between. For well over a century the Co-Operative Weather Observer Program has provided the NWS with additional weather reports, but there are only, on average, about one observer per county.

That's where CoCoRaHS comes in. There can be, in theory, a virtually unlimited number of CoCoRaHS observers per county. Rain and snow data from many points within a small geographical area give meteorologists and researchers a very clear picture of the pattern and amounts of precipitation. This information can go a long way in determining what streams may be in danger of flooding, what regions are suffering drought conditions, where the snow pack is the deepest and most likely to create future flooding problems, and much more.

The data provided via CoCoRaHS are available for free to anyone with an Internet connection. As CoCoRaHS continues to grow, it is being used more and more as a research tool by universities, government committees, farming associations, and many others. So keep sending in those reports!

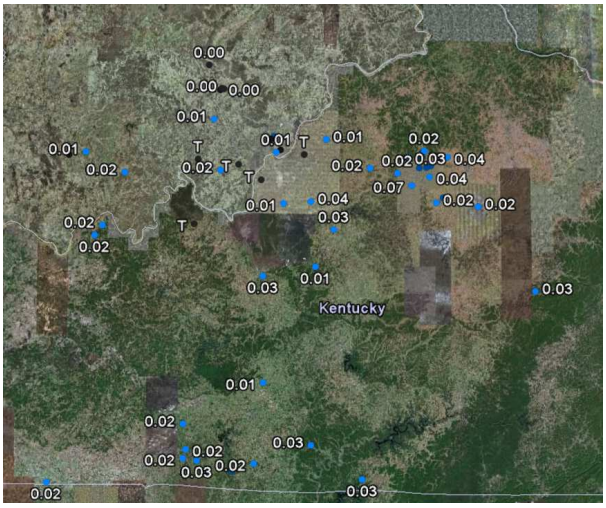
The Most Consistent Observers

These folks reported *every* day this past winter (December 1 through February 28):

KY-AL-4, Scottsville 9.2ESE
KY-CS-1, Bradfordsville, 8.5ENE
KY-ES-2, Irvine, 9.9NNW
KY-FR-1, Frankfort, 3.3NE
KY-GL-1, Glencoe, 3.8NNE
KY-JF-1, Anchorage, 2.8NE
KY-JF-10, Pleasure Ridge Park, 0.6NNW
KY-LL-1, London, 1.7NE
KY-OL-1, Park Lake, 1.8NE

Thank you!

From December 1, 2008 to February 28, 2009 there were 1,720 plain language comments from Kentucky CoCoRaHS observers, for an average of about 19 per day. These comments provide meteorologists with additional useful weather information. KY-GL-1 sent in a comment every day of the winter, with KY-LL-1 contributing a comment on all but one day! Great reporting!



If you have Google Earth, you can plot central Kentucky's CoCoRaHS reports through the NWS Louisville website. On the main page of the site, weather.gov/louisville, click on the "Rivers & Lakes" tab above the forecast map. Toward the bottom of the new page that appears there is a link called "Daily Precipitation/Temperature Plot (KML)." Click on the link and you will receive CoCoRaHS reports plotted in Google Earth, along with Co-Op Network reports and automated gauge readings.

Edmonson County
Chris Allen/WBKO

Louisville
Mark Schweitzer/NWS

From the evening of January 26 to the morning of January 28, 2009, a catastrophic ice storm glazed the Commonwealth in a thick layer of ice. Hundreds of thousands of residents lost power, some of whom were in the dark for weeks. Presented here are selected comments from Kentucky's intrepid CoCoRaHS volunteers who witnessed the historic storm first-hand.

1/27, 7:32am: Walking is treacherous. Lost satellite feed; no school. (Rain gauge) covered in glaze inside and out. Scottsville 4.9NE, KY-AL-3

Western Kentucky
NWS

NWS office in Paducah
NWS

1/28, 6:24am: Due to thick solid ice on the ground, measurement for snow and ice on the ground could not be performed as the ice was too hard for the ruler to measure. Gauge also completely ice covered. My yard is like a skating (rink). Dangerous to venture out. Lexington 1.7SSE, KY-FY-9

1/28, 10:51am: Trees down, power lines down because of ice, transformers blew up, very hazardous road conditions. Morehead 1.7SW, KY-RW-2

1/28, 8:00am: During the night we could hear pops and crunches and crackles as tree branches, one following another, came crashing down. Electricity went out. This morning ice-laden tree branches bend to touch the ground and other broken limbs block roads and paths. Ekron 2.6ESE, KY-MD-2

1/28, 9:02am: Disaster area in central Kentucky. No electricity, no water. Jillions of trees down, roads blocked. Elizabethtown 1.8SE, KY-HD-5

1/28, 9:43am: Major icing, large trees down all over the neighborhood. Lexington 5.2SSW, KY-FY-2

Western Kentucky
NWS

1/28, 10:03am: Trees are all down and broken. Sturgis 5.4ENE, KY-UN-1

1/29, 5:53am: This is one of the worst ice storms I've seen in my life. Pleasure Ridge Park 0.6NNW, KY-JF-10

1/29, 9:06am: Much tree damage. The entire Bluegrass Electric Power grid down. Many homes and apartments have suffered soffit and roof damage, with water melting into interior walls and doorways. Many large limbs down. Frankfort 3.3NE, KY-FR-1

Western Kentucky
NWS

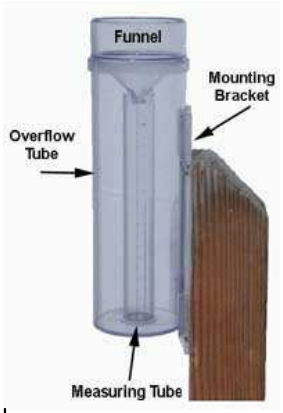
Colo, Kentucky
Cliff and Sandy Steele

Precipitation Extremes for Winter 2008-2009

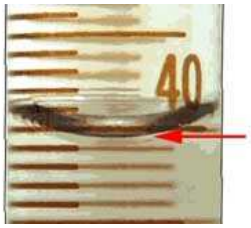
Most Precipitation: 17.33" at Bradforsdville 8.5ENE, KY-CS-1
Least Precipitation: 10.85" at Cynthiana 8.3ENE, KY-HR-1
Most Snowfall: 22.5" at Morehead 6.4NE, KY-RW-3
Least Snowfall: 1.0" at Guthrie 0.8WNW, KY-TD-2

Tips on Measuring and Reporting Rainfall

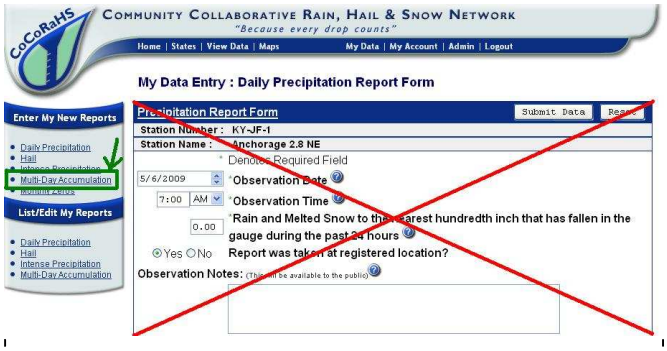
- Before any observations can be taken at all, the gauge must be set up in a good location for measuring precipitation. It should be as far away from any nearby objects as possible. Also, the top of the gauge should be at least a few inches above the top of the post to which it is attached.
- Try to read the gauge every day at the same time, preferably as close to 7am as possible. It's most helpful to NWS offices if you can submit your report before 9:30am.
- If heavy rain filled the inner tube and partially filled the outer tube, on a piece of paper record the amount in the inner tube first, and dump the water. Then pour the rainwater from the outer tube into the inner tube, and add that amount to what was originally in the inner tube. This is the total amount of rain that fell into your gauge.
- If the surface of the water in the tube appears curved, read the amount at the bottom of the curve.
- If you know sprinkles or flurries fell, but it was less than 0.01" (the first mark at the bottom of the inner tube), report a "T" (trace). Dew is not precipitation, so do not record dew.
- If it didn't rain or snow, please send in your zero (0.00") report anyway. It's also important to know where it *didn't* rain!
- If you're unable to read your gauge for a few days, such as when you're out of town, you can still send us a report when you do get back to measuring precipitation. On your first day back, simply send in your precipitation report via the "Multi-Day Accumulation" form. Please do not record the amount on the Precipitation Report Form that you normally use for single-day amounts.



Make sure your gauge is mounted correctly!



Read the amount at the bottom of the curve.



Use the Multi-Day Accumulation form when submitting a precipitation amount that fell over the course of two or more days.

Do you have suggestions on how to improve CoCoRaHS or ideas on topics you would like to see covered in future issues of the *CoCoRaHS Observer*? Do you have any pictures of your rain gauge or weather station that you'd like to share? Feel free to e-mail us any time at priddy@uky.edu . We'd like to hear from you!